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A Description of the Uses of a certain Powder for yielding very smooth and close Mettal, and of easier carriage, &c.

THis was lately communicated to the Publisher by a German Physician residing at *Frankfort* on the *Mayne*, in High-Dutch; the English of which is as follows;

1. The Powder, I speak of, maketh the Mettal so close and smooth, that it leaves not the least pit in the piece, and that a Gun so cast needs no boaring.

2. One third of the Mettal may be spared.

3. Such Guns remain clean and neat a long while. In the Year 1672. July 9. there was cast a Demy-canon; weighing 34 hundreds of weight. This being tryed with a bullet of 34 pounds weight, there was employed the first time 12 pounds of powder, the second time as much, the third time 15 pounds, and the fourth time 24 pounds, strong powder; all which tryals it endured very well. Besides, not long since there was cast a small Petard of only two pounds of this mettal, with which I broke in pieces a beam of a Rhine-foot square, the Petard remaining entire and perfect.

When you have occasion to carry these pieces over land, you shall not need so many horses by far as otherwise. And in great Ships and Galleons, that are sometimes mounted with 100 Guns each, you may of the matter of 200 make 300 Guns, performing the same, if not a better, effect. If his Majesty be pleased to command a *Specimen* of this Powder for a good tryal, we are ready to send it. It is not only easie to make, but also of small expence.

Extracts of two Letters of Dr. Swammerdam, concerning some Animals, that having Lungs are yet found to be without the Arterious Vein; together with some other curious particulars.

WE shall give the Reader both these Extracts in the same Language the Letters were written in. The first was written *Jannar. 24, 1673, at Amsterdam, viz;*

— In nuperis meis Sectionibus Animalia quædam deprehendi, quibus, licet uterentur Pulmonibus, Vena tamen Arteriosa fuerit à Natura denegata; sic ut sanguis immediate è corde, præviâ nullam in pulmonibus Circulationem aut conquassationem passus, per totum corpus distribueretur: quæ Observatio Anatomiam comparatam quàm maximè commendat.

Scarabæi nasi-cornis genitalia, quoad vasa testicularia, ad amissim cum humanis convenire testiculis, atque ex unico tantum funiculo, longo, cavo, innumerabiliter flexo, atque (quod nondum in homine mihi visum,) principio seu apice cæco constare, non sine aliquo stupore lustravi: Ut jam nullibi non manifesta sint divinæ sapientiæ & summi in abjectissimis animalibus artificii vestigiâ.

Thus He in his first Letter: whereupon being desired to nominate those Animals, that are destitute of the *Vena Arteriosa*, he very obligingly sent, in a second Letter dated March 14. 1673. at Amsterdam, the following Observations.

— Cùm videam, Societati Regiæ meas non displicere operas, equo illius desiderio è vestigio obtemperare volui; eoq; libentius, ut aliis etiam in rem aded notabilem inquirendi ansa daretur, proindeque Naturæ abdita eò citiùs manifestarentur.

Nemo, opinor, Ranis pulmones denegabit, postquam Exercitissimus Malpighius tam curiosa tamq; notabilia de iis divulgavit, atque Solertissimus Gualterus Needham pulmone manifesto eos donari atque respirare annotavit. In his tamen Amphibiis Vena arteriosa desideratur: Quare nec eorum sanguis ullo modo per Pulmones circulatur, in iisvè cribratur, verberatur aut comminuitur; cùm mox ex simplici eorum cordis sinu per totum corpus, pulmonibus intactis relictisque, dispescatur. Quod certè haud debile mihi argumentum videtur, quo, inter alia, Hepati suum Sanguificationis munus, restituere aliquando conabor.

Arteria tamen manifesta (bronchiali, seu potius pulmonali analogâ) in Ranarum pulmonum succingente tunica adest, quæ mirandum in modum, ac retis mirabilis ad instar, per eorum superficiem tenditur, atque minutissimis suis propaginibus sensim ad interiores Vesículas progreditur; ubi, ut Ego quidem arbitror cum Vena pulmonali Anastomofin patitur, etiam oculis manifestam. Venosum illud vas Arterioso duplo majus: In Pulmonum cavo,

ac præcipuè in Vesicularum ejus oris ac limbis situm est, à quo omnibus cellulis, imò & ipsi tunica succingenti, capillaribus ac ferè invisibilibus ramusculis prospicit.

Animalia, quæ suspicor eandem cum Ranis Pulmonis structuram obtinere, sunt Bufones, Lacertæ, Serpentes, Chamæleontes, Testudines, Salamandræ aquaticæ, & si quæ sunt alia pulmonibus Membranosis instructa; quorum structuram mihi nondum licuit perquirere. Suffecerit jam indicasse animalia, Virisque me longè sagacioribus viam monstrasse.

Cùm videam vobis grata fuisse, quæ de Nasi-cornis Scarabei genitalibus nota veram, non alienum fore duxi eorum delineationem Cl. Tuæ transmittere; in qua imprimis exhibentur non modò Testiculi ex unico funiculo duos pedes & sex pollices longo; sed & Vasa Deferentia, semen copiosum ac album, quando løduntur, stillantia; nec non vesiculæ sen potius glandulæ seminales sex, admodum elegantes; glandularumq; seminalium ductus protensi, materiam seminalem sub-flavam (ut in hominibus ac brutis quoq; observatur) continentes.

An Account of some Books.

- I. *LA STATIQUE, ou La Science des Forces Mouvantes, par le P. Ignace Gaston Pardies, de la Compagnie de Jesus. A Paris, 1673. in 12°.*

THE Learned Author of this Book had proposed to himself to write a whole Body of *Mechanicks*, such an one, as might be accommodate to ordinary Capacities; he conceiving, that there had not been extant hitherto a compleat system of that Science, or, if there had, it did exceed the reach of most Readers: which latter he thinks to be the Character due to Dr. *Wallis* his Three Tomes de *Motu & Mechanice*, of which we gave an Account N°. 54. p. 1086. N°. 61. p. 2005. N°. 78. p. 2286.

But since the publication of this part of it, we understand that he hath been prevented and cut off by an intimely Death; being regretted by those that knew his frankness and strong inclinations to promote philosophical knowledge. How far he hath indeed advanced those other parts of this Design, and, whe-